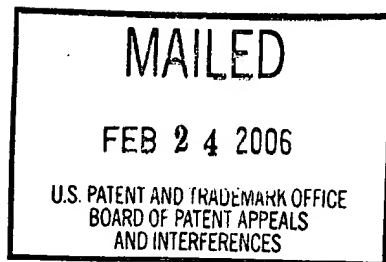


The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte FREDERICK M. DISCENZO



Appeal No. 2006-0368  
Application No. 09/406,368

HEARD: February 7, 2006

Before GROSS, BLANKENSHIP and NAPPI, Administrative Patent Judges.

NAPPI, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 of the final rejection of claims 33 through 38 and 41 through 51.<sup>1</sup> For the reasons stated *infra* we sustain the examiner's rejection of claims 33 through 38 and 41 through 51.

**THE INVENTION**

The invention relates to a system and method of acquiring vibration data using optical sensing. See page 3 of appellant's specification.

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<sup>1</sup> The examiner has identified claims 8 through 11 as allowable and that dependent claims 39 through 40 contain allowable subject matter.

Claim 33 is representative of the invention and is reproduced below:

33. A system that determines a vibration state for a machine, comprising:  
a light receiver that receives light from a source;  
an obscuring body that based on a particular vibration state of a machine obscures a portion of light transmitted from the source to the light receiver, and  
a processor that analyzes an amount of light received by the light receiver to determine the particular vibration state.

### **THE REFERENCE**

The reference relied upon by the examiner is:

Udd et al. (Udd)	4,471,659	September 18, 1984
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### **THE REJECTIONS AT ISSUE**

Claims 33 through 38 and 41 through 51 stand rejected under 35 U.S.C. § 103 as being obvious over Udd. The examiner sets forth the rejection on pages 3 through 6 of the answer. Throughout the opinion we make reference to the briefs and the answer for the respective details thereof.

### **OPINION**

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

With full consideration being given to the subject matter on appeal, the examiner's rejection and the arguments of appellant and the examiner, for the reasons stated *infra* we sustain the examiner's rejection of claims 33 through 38 and 41 through 51 under 35 U.S.C. § 103.

### **Grouping of the Claims**

Initially we note that on pages 4 through 7 of the brief appellant presents arguments directed to the rejection of claims 33 through 38 under 35 U.S.C.

§ 103. Appellant's arguments in this section are only directed to independent claim 33. On pages 7 and 8 of the brief, appellant presents arguments directed to the rejection of claims 41 through 51 under 35 U.S.C. § 103.

37 CFR § 41.37(c)(1)(vii) states:

When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone. Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately. Any claim argued separately should be placed under a subheading identifying the claim by number. Claims argued as a group should be placed under a subheading identifying the claims by number. A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.

Accordingly, we group the claims into two groups:

group A, consisting of claims 33 through 38 and we will treat claim 33 as representative of group A and

group B, consisting of claims 41 through 51 and we will treat independent claim 42 as representative of group B.

### **Rejection of Claims 33 through 38**

Appellant argues, on page 4 of the brief: "[i]ndependent claim 33 recites the limitation ***a processor that analyzes an amount of light received by the light receiver to determine the particular vibration state.***" Appellant argues, on pages 5 and 6 of the brief, that Udd has been misconstrued by the examiner, stating:

Udd *et al.* does not teach or even suggest "that with quadrature detection, a wide range of vibration frequencies and amplitude is determined." Rather Udd *et al.* discloses only that quadrature allows the detection of vibration over a wide range of frequencies and amplitudes. (See *e.g.* Udd *et al.* at Abstract). Udd *et al.* does not disclose or even suggest that the use of quadrature would allow frequencies and amplitude to be determined.

On page 6 of the brief appellant argues that Udd teaches measuring the sine and cosine of the positions of gratings to determine vibration. As such, appellant concludes, on page 7 of the brief, that Udd does not teach or suggest the claimed "processor that analyzes an amount of light received by the light receiver to determine the particular vibration state. Further, on page 3 of the reply brief, appellant argues:

Udd, *et al.* does not teach or suggest either obscuring a portion of light transmitted or analyzing an amount of light received at a light receiver but instead is using the sine and cosine of the phase position of the grating to determine "the instantaneous relative position of the grating." (See *e.g.*, col. 3, lns. 33-37).

In the Examiner's Answer it is asserted Udd, *et al.* teaches "a suitable electronic processing means is used for quadrature

detection ... and that with quadrature detection, a wide range of vibration frequencies and amplitude is determined" rendering it obvious that the processor that determines quadrature also determines a particular vibration state such as frequency and amplitude. Applicant's representative disagrees. Udd, *et al.* does not teach or even suggest "that with quadrature detection, a wide range of vibration frequencies and amplitude is determined." Rather Udd, *et al.* merely discloses how to obtain two signals, 90 degrees out of phase, to apply quadrature detection to detect vibration over a wide range of frequencies and amplitudes. Udd, *et al.* does not disclose or even suggest that the use of quadrature would allow frequencies and amplitude to be determined. Nor would it have been obvious to one having skill in the art to modify the teachings of Udd, *et al.* to render the claimed invention.

In response the examiner states, on page 8 of the answer, that Udd does not expressly show the claimed processor but rather "suggests to one of ordinary skill in the art that it would be obvious to the skilled artisan that the electronic processing means of Udd *et al.* analyzes an amount of light received by the detector to determine the particular vibration state." Further, the examiner states:

The Office agrees with Appellant's argument on page 6 that the frequency and amplitude of vibration is not determined by Udd *et al.*, however it is maintained by the Office that Udd *et al.* teach the detection of vibration and that the detection of the existence or nonexistence of vibration meets the claimed limitation of "the particular vibration state." The Office submits that "the particular vibration state" as claimed does not exclude the detection of the existence or nonexistence of vibration.

We concur with the examiner's claim interpretation and findings regarding the teaching of Udd.

First, we must determine the scope of the claim. Claims will be given their broadest reasonable interpretation consistent with the specification, and

limitations appearing in the specification will not be read into the claims. *In re Etter* 756 F.2d 852, 858, 225 USPQ 1, 5 (Fed. Cir. 1985). In analyzing the scope of the claim, office personnel must rely on the appellant's disclosure to properly determine the meaning of the terms used in the claims. *Markman v. Westview Instruments, Inc.*, 52 F3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir. 1995). "[I]nterpreting what is *meant* by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'" (emphasis original) *In re Cruciferous Sprout Litigation*, 301 F.3d 1343, 1348, 64 USPQ2d 1202, 1205, (Fed. Cir. 2002) (citing *Intervet America Inc v. Kee-Vet Laboratories Inc.* 12 USPQ2d 1474, 1476 (Fed. Cir. 1989)). Appellant's arguments in the appeal brief appear to equate "frequency and magnitude" with vibration state. We do not find that appellant's specification provides a definition of the term "vibration state" nor has appellant asserted that one exists. In the reply brief appellant has not contested the examiner's interpretation of the claim limitation "vibration state." Appellant's statement, on page 3 of the reply brief, "vibration state such as frequency and amplitude" suggests that appellant considers the scope of the term "vibration state" as being broader than "frequency and amplitude." Nonetheless, we find that limiting the scope of the term "vibration state" to frequency and amplitude would be improperly narrowing the scope of the claim by importing limitations from the

specification. We concur with the examiner that the scope of the term is broad enough to encompass the determination of existence and nonexistence of vibration.

Having determined the scope of the claim we next consider the teaching of Udd. We concur with the examiner's findings on pages 3 and 4 of the answer that Udd teaches a light receiver item 188 and an obscuring body 70 that based on vibration obscures a portion of the beam of light. We add the following to further clarify. Udd teaches grating item 70 has opaque and transparent strips, which create a beam having a pattern of parallel dark and light strips, i.e., the portions of the light striking the grating are obstructed by the opaque strips. See column 3, lines 5 through 10. Udd teaches several embodiments, see figure 3, 5 and 7. In the embodiments of figures 3 and 5, after passing through grating 70 the beam of light is presented to two other gratings 88 and 90, which have the same grating pattern. See column 3, lines 10 through 15. Grating 70 is floating, gratings 88 and 90 are mounted to the housing and vibrate with the housing, thus the device monitors relative motion between the gratings caused by vibration. See column 2, lines 66 through column 3, line 4; column 3, lines 14 through 16; and column 4, lines 45 through 56. We note, as shown in figure 3, the orientation of gratings 70 and 88 are such that they are not aligned and together they appear to block the entire beam, see also figure 4, which shows that the output of the intensity sensor for the beam 92 is zero when the gratings are at their initial position, undisturbed. In the embodiment of figure 7 two beams

of light, item 126 and 128, are presented to a floating gradient, vibration causes the beams of light to move but the gradient remains stationary. See column 3, line 58 and column 4, lines 15 through 19. Thus, we concur with examiner's findings that Udd teaches a light receiver and an obscuring body that obscures a portion of light transmitted from the source to a light receiver based upon a vibration state.

The examiner has found that Udd provides suggestion to use a processor to analyze the amount of light to determine a vibration state. Our reviewing court has stated, "[T]he Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion." *In re Lee*, 277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). When determining obviousness, "[t]he factual inquiry whether to combine references must be thorough and searching." *Lee*, 277 F.3d at 1343, 61 USPQ2d at 1433, **citing *McGinley v. Franklin Sports, Inc.***, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). "It must be based on objective evidence of record." *Id.* "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617. "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." *Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617, **citing *McElmurry v. Arkansas Power & Light Co.***, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993). The



Federal Circuit states that, “[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” *In re Fritch*, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). In addition, our reviewing court stated that when making an obviousness rejection based on combination, “there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by Applicant.” *Lee*, 277 F.3d at 1343, 61 USPQ2d at 1433 (quoting *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998)).

On page 4 of the answer the examiner finds that while Udd does not expressly show a processor that analyzes an amount of light received by the receiver, the examiner finds that Udd provides a suggestion to have a processor determine the vibration state, citing column 4, lines 51 through 65. We concur with the examiner’s finding. The device taught by Udd is described throughout the reference as a vibration sensor. Udd identifies that the intensity of the beams is indicative of the position of the gradient, i.e. the position is indicated by intensity of the light. See figures 2 and 4, see also column 37 through 39, column 3, lines 23 through 25. Intensity of light is the amount of light per unit area, thus we consider intensity to be to be a measure of the amount of light. Udd teaches that the vibration sensor can be used with a seismometer and that seismic movements (i.e. vibrations) cause relative movement of the gratings

which modulate the beams of light. Udd teaches that a detector 188 converts the intensity of the beam to electrical signals that are then transmitted to processing means to detect a seismic signal, a vibration. See column 4, lines 40 through 53. Thus, we find evidence to suggest that Udd teaches the claimed “processor that analyzes an amount of light received by the light receiver to determine the particular vibration state.” As anticipation is the epitome of obviousness, we find ample suggestion to use a processor that analyzes the amount of light to determine the vibration state. Accordingly, we sustain the examiner’s rejection of claims 33 through 38.

#### **Rejection of Claims 41 through 51.**

Appellant argues on pages 7 and 8 of the brief:

Independent claims 42, 49 and 51 recite similar limitations as claim 1 [sic], specifically, *a processor that analysis [sic] an amount of light*. As discussed in Section VII (A), *supra*, Udd *et al.* does not teach or even suggest such limitations. Udd *et al.* merely shows how to obtain two output signals for quadrature detection and does not make obvious the subject invention.

On page 4 of the reply brief, appellant argues that the light and dark strips of Udd “are not a shadow fringe where the remaining light illuminates part or all of a light receiving arrangement as a function of the particular vibration level.”

Initially, we note that claims 41 and 51 do not contain limitations directed to a “shadow fringe.” Accordingly, we sustain the rejection of claims 41 and 51 for the reasons stated *supra* with respect to claim 33.

Independent claim 42 contains the limitation of “an obscuring body that obscures a light directed upon the light receiving arrangement to cast a shadow

fringe thereupon at a particular vibration level of a machine, the remaining light illuminates part or all of the light receiving arrangement as a function of the particular vibration level.” The examiner states, on page 6 of the answer, that Udd teaches “the obscuring body casts a shadow fringe upon the light receiving arrangement (93, 98, 188) and the remaining light illuminates part or all of the light receiving arrangement as a function of the particular vibration level as can be seen in Figure 4.” As stated *supra*, with respect to claim 33, we concur with the examiner's finding that Udd's grating meets the claimed obscuring body and a processor to analyze the light to determine the vibration level. Appellant's arguments do not explain how the claimed shadow fringe differs from Udd's device. Accordingly, we sustain the examiner's rejection of claim 42 and the claims grouped with claim 42, claims 43 through 50.

Additionally on page 3 of the brief, appellant identifies that the system of claim 42, which makes use of the shadow fringe, is discussed on page 22 of appellant's specification. Page 22 of appellant's specification discusses the embodiment of appellant's figure 8. However, appellant's explanation does not correlate the obscuring body of claim 42 to an element of the embodiment of figure 8. Further, we do not find that appellant's disclosure provides a discussion of a shadow fringe on page 22. The fringe discussed on page 22 of appellant's specification is not caused by a shadow but rather constructive and destructive interference. Thus, it appears that claim 42 is directed to the embodiments of figures 3 and 4 which contain obstruction elements.

### **Conclusion**

Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief or by filing a reply brief have not been considered and are deemed waived by appellant (see 37 CFR § 41.37(c)(1)(vii)). Support for this rule has been demonstrated by our reviewing court in *In re Berger*, 279 F.3d 975, 984, 61 USPQ2d 1523, 1528-1529 (Fed. Cir. 2002) wherein the Federal Circuit stated that because the appellant did not contest the merits of the rejections in his brief to the Federal Circuit, the issue is waived. **See also *In re Watts***, 354 F.3d 1362, 1368, 69 USPQ2d 1453, 1458 (Fed. Cir. 2004).



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Application No. 09/406,368

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